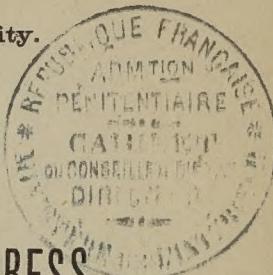


ANTHROPOMETRICAL DESCRIPTIONS

New Method of determining Individual Identity.



CONFERENCE

GIVEN AT THE

INTERNATIONAL PENITENTIARY CONGRESS
AT ROME

by

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ADDRESS

of

M. LOUIS HERBETTE

Conseiller d'Etat, Director of the Penitentiary Department
at the Ministère de l'Intérieur.

MEETING OF 22 NOVEMBER 1885

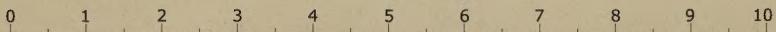
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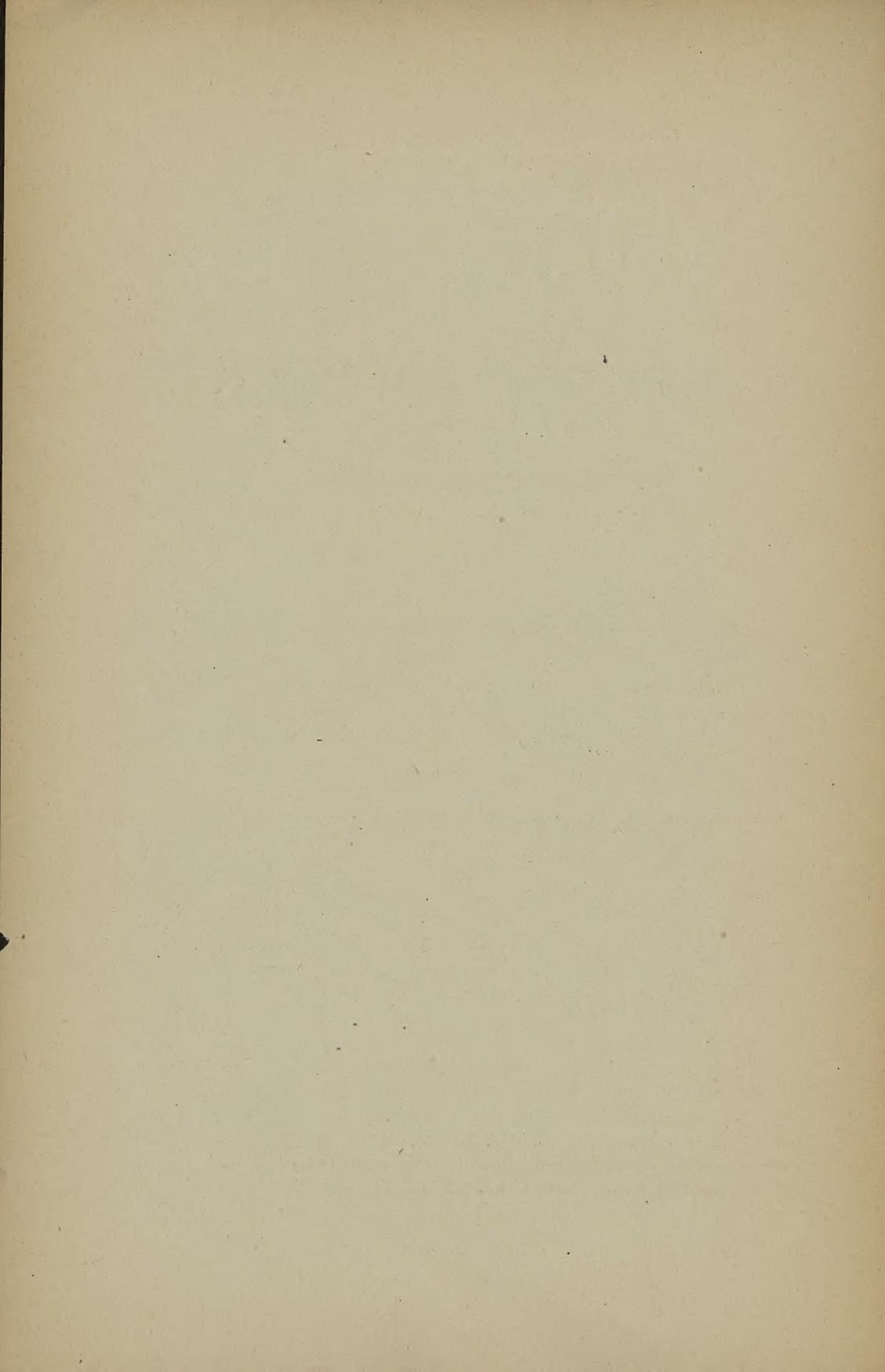
TRANSLATED BY E. SPEARMAN JUDGE OF PEACE

Late of Her Britannic Majesty's Civil Service.

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I

GENERAL EXPLANATION OF THE SUBJECT

The subject we are about to consider is a method by which habitual criminals giving a false name etc. may be identified.

This method is based on a system of anthropometrical descriptions, that is to say the indications depend essentially on a knowledge of the lengths etc. of certain bony parts of the human frame, such as the length and width of the head, the height, the length of the middle finger of the individual examined ascertained by actual measurement.

Before entering into the details of the process, it will be well to point out briefly the general advantages attached to this question of identity.

An old offender once more in the hands of Justice to answer for some fresh offence that he has committed has every reason for wishing to conceal his real name or the name under which he has been previously convicted. He may even, if he has taken the necessary precautions, assume the name etc. of a person who has never even been accused of any offence. He thus escapes the heavier punishment, which more or less in all countries either by the strict prescription of the law or by the latitude allowed to the judge, follows a second conviction.

A large number of these professional criminals moreover are wanted for other offences, besides those for which they are actually in custody; either for convictions per contumacy or for infractions of Military Service, or what amounts to precisely the same thing, they have very sufficient reasons for thinking that they are being wanted by the police, for some previous offence of which they have been guilty.

In these circumstances we may be sure that a prisoner of this class will submit to many a month of detention before he will voluntarily confess his real name and thus by his own act expose himself to fresh judicial proceedings.

The fact of the name given being on the register of Etats Civil or Civil Courts is evidence that such an Etat Civil exists, but it by no means proves that it is the name of the person who is in custody and who has given it as his own.

Criminals do not scruple to interchange names amongst themselves though by preference they assume those of honest men.

We have had cases where men when rearrested have not hesitated to assume the names of persons they had at some previous time robbed and whose exact position they had learned through the evidence given before the Tribunal by their victims themselves.

International criminals arrested in foreign countries or persons giving themselves out to be foreigners have still greater facilities for deceiving and have no need to have recourse to these tricks. Whatever name they may choose to adopt must of necessity be accepted as correct as there is no means whatever of proving or disproving its authenticity.

There can be but little doubt but that in these cases the international exchange of Judicial Records would be a step in the right direction, but even that would be insufficient. What useful information would be obtained from such records with reference to an habitual criminal who had taken the precaution not to give his own but some false name?

We do not allude to the usual description which generally accompanies these papers—"Chin round, face oval, eyes grey, etc." which have never led to the recognition of criminals, save in the realms of romance.

A trained anthropologist alone would be able to deal suitably with these descriptions.

Photographs are certainly preferable to descriptions of any kind, but photography solves only a part of our problem. The experiment tried in Paris has clearly demonstrated this. In the course of ten years the police had made a collection of the photographs of 100,000 persons. Is it possible to search through these 100,000 photographs whenever an arrest is made?—Clearly not.

The use of photography therefore has not rendered the services anticipated and the most guilty and most cunning of habitual criminals continued to obtain the same benefits and the same forbearance which the law and prison regulations extend to a first offence.

Inspectors of police and superintendents of houses of correction did indeed recognise a certain number of these men, on an average about

twenty per month in Paris alone and such recognitions were at once communicated by them to the proper authorities.

The adoption of the anthropometrical system of descriptions has entirely altered these figures. A great number of criminals have given up changing their names because they have found it useless as a means of concealing their identity and the warders of houses of correction do not now find out more than two or three per month. The only criminals who now do it are those who have been long absent from Paris or those who have some very special reason for trying that chance of escaping detection. By the new system about forty per month are recognised,

II

METHOD OF PROCEDURE

We will now explain in a few words the mechanism of our system.

We have already stated that the anthropometrical description consists for each subject examined of the length of various bony substances always the same and taken in a regular order. These are specially the height, the length and breadth of the head, the length of the foot, of the middle finger, etc.

Now to clearly illustrate our system we will suppose that these measurements have been noted on the 100,000 photographs collected in Paris during the last ten years, and that it is with the classification of this collection that we have now to deal. We shall see later how we may dispense altogether with photographs.

The 100,000 photographs will first be divided according to the sexes—the men on one side, the women on the other. The latter far less numerous than former will not amount to 20,000—in addition we have 20,000 children who have a class to themselves. We will suppose that we have divided the group of 60,000 men remaining into three classes according to their height thus:

Of short men about	20,000	photographs.
Men of medium height	20,000	—
Tall men	20,000	—

That these three classes may be approximately equal, it is evident that the limits of the class of men of medium height must be restricted more than those of the other two classes and must comprise only those

whose height ranges from 1^m 62 to 1^m 67 inclusive, whereas the class of tall men should comprise those of 1^m 68 and upwards, and the class of small men those of 1^m 61 and under.

Each of these primary divisions should again be divided on the same principle without taking any further notice of the height, into three classes according to the length of the head of each individual.

Each of these new subdivisions amounting to nine will therefore contain:

Short heads about	6.000	over photographs.
Medium length	6.000	—
Long heads	6.000	—

These three classes of 6,000 each will again be subdivided into three divisions according to the width of the heads—and will each contain:

Narrow heads	2.000	photographs
Medium width	2.000	—
Wide	2.000	—

Experience has proved that with most people the breadth of the head varies independently of the length—that is, given that an individual has a certain length of head, it by no means follows that the breadth of his head can be determined *a priori*.

The length of the middle finger will give us a fourth and still more precise indication by which will divide again into three each one of the packets of photographs and will reduce them to a series of 600; these may again be subdivided according to the length of the foot, the length of the arms outstretched at right angles from the body, and also according to the colour of the eyes.

Thus by the help of five new anthropometrical coefficients (viz. for the sex, age, the height and colour of the eyes which have been made use of from the earliest days), we have been enabled to divide our collection of 100,000 photographs into groups of ten each which we can now easily and rapidly examine.

Let us take the case of a man in custody who declines to give his name. How shall we ascertain if he has been already measured or photographed—our first step will be to accurately measure his height and we shall then see in which series of drawers we are to look for his portrait. The length of his head will give us a still more direct indication as to the drawer in the series, and finally the width of his head, the length of his foot, of his arms outstretched and the colour of his eyes will bring us to the exact spot where his photograph should be.

It may be said however, where will you place the photograph of a man whose measurements exactly coincides with the limits of one of your classes, such a case for instance as that of a man of 1^m 68. If you place him amongst the tall men, that is to say from 1^m 68 upwards, may it not happen that when you measure him some years afterwards you may find that he is only 1^m 67, his height being reduced 1^{cm} by the effects of age, and thus you may search for him not amongst the tall men, but amongst those of medium height.

It will be necessary in this case, and indeed in all cases where a measurement approaches near enough to the limits of a class to give rise to any subsequent error, that search should be made in each of the adjoining divisions, precisely as you seek for a word in a dictionary when you are not quite sure as to how it is spelt.

Nothing is simpler than the taking of these measurements nor can anything be more quickly accomplished. It is an operation which requires from two to three minutes and the intelligence of an ordinary constable. Whilst the hatter has in his shop thirty-two sizes for his hats, and the shoemaker twenty for his shoes, we have but three categories—"the large", "the medium" and "the small" and our mode of taking each measurement is calculated in such manner that it is impossible for the operator to make a mistake, or for the person operated upon to deceive the operator.

III

MANNER OF USING THE INSTRUMENTS AND DETAIL STATEMENT OF THE RESULTS OBTAINED

The instruments used are— (1)

Compass for length and breadth of head (Fig. 1);

Two sliding measures for feet, arms, etc.— (Figs. 2 and 3).

These instruments are not very expensive (25 fr. the three wholesale). (2)

As to the—

1. — *The height.*

This is taken in the usual manner but a little more accurately. It is absolutely necessary that the subject should be barefooted and place himself with his back against a wall (Fig. 4).

2. — *Length of head.*

The subject being seated on a stool, one point of the compass is placed in the hollow above the bridge of the nose whilst the other point is used to find out the greatest length to the back of the head (Fig. 5). By means of a screw the opening in the compass is fixed at that length, and as a check, the operation of measuring is recommenced. The instrument is so accurate that should a mistake of only one millimetre too little have been made on the first measurement the points will not pass; if on the contrary the compass has been opened one millimetre too much, the points

(1) See Appendix.

(2) At Mr. Colas, manufacturer of measuring instruments, n° 18 rue Saint-Gilles — Paris.

will not touch the skin of the head. It will be seen therefore, extraordinary though it may appear, that without the slightest difficulty, the diameters of the head can be measured to within one millimetre.

We have found by experience that the length of the heads of different individuals differ more than 3 centimetres (say 30 millimetres). It is admitted that we have no power to lengthen our heads, and it is well known that the skull developpes but very little after we have obtained twenty years of age.

With our stature it is not the same, for as years pass by we get bent and our stature becomes less, besides as to our height it is possible to cheat to the extent of two centimetres without its being discovered by the operator.

The differences in height moreover between different individuals do not commonly vary more than 30 centimetres (from 1^m 50 to 1^m 80). The result is therefore, if we admit that we can only measure the height to within 3 centimetres, that we can only establish ten different classes of heights progressing by 3 centimetres ($10 \times 3 = 30$) whereas with the head which we can measure to 1 millimetre and which varies 30 millimetres in different individuals we are enabled to establish thirty classes.

The length of the head therefore differing three times more than the height, it follows that it is three times more advantageous for anthropometrical purposes than the height.

The same calculations might be made for all the other measurements to which we shall refer hereafter.

In this matter as in all others we must take care to distinguish between quantity and quality.

Height varies considerably in actual figures, but it is difficult to measure accurately. The diameters of the head, length of middle finger, foot, etc., varying only a few centimetres between different individuals, can therefore be accurately measured.

The above explanation was necessary to show how it is always possible for us to establish our divisions : *Small—Medium—Large*.

3. — Maximum breadth of head.

This is measured from one parietal bone to the other in the same manner at the length of the head is measured (Fig. 6).

4. — Length of middle finger of left hand.

This is the best of our indications, for it can be measured to a millimetre, provided care is taken that the finger is bent at an exact right angle with the back of the hand; there can be no cheating with this and

it undergoes no alteration from adult to old age (Figs. 7 and 8). Notice must however be taken of any unusual length of nail in the person being measured.

5. — *Maximum length of left foot.*

In taking this measurement the subject must of course be barefooted, and in order to avoid any chance of cheating the subject should stand on the left foot *only* with the left knee bent. This is not quite so good a measurement for our purposes as that of the middle finger, and can only be measured to within two millimetres (Fig. 9).

6. — *Maximum length of arms extened.*

This is a measurement which is popularly supposed to be always equal to the height, is in reality sometimes greater by 5, 10, 15 or 20 centimetres and sometimes less by several centimetres. It assists therefore in classifying even after the height.

7. — *Colour of the eyes. (1)*

A special table has been framed for the colour of the eyes which gives us seven categories. This indication has however the disadvantage of requiring an apprenticeship of several days to work it properly and moreover is not indispensable.

The above examples will show how little relation there is in the sizes of the various parts of the human frame. Thus we find a short man with a large head and large feet, whilst another is tall and has small feet.

(1) These categories are based on the intensity of the pigmentation of the iris. We thus name the yellow orange matter generally clustered in a circle or aureola round the pupil. Firstly we note the exact shade of the pigment when it exists and secondly the approximate shade of the deep stratum of the periphery of the iris.

Hence our seven divisions:

1° Impigmented or iris azure blue and slaty blue with aureola concentric pupillary aureola more or less pale but destitute of yellowish pigment.

2° Iris inclining more or less to blue or slate colour, but with a light yellow aureola.

3° Same shade but with a further aureola, approaching orange.

4° Iris reflection more or less greenish and with a chestnut aureola.

5° Same shade with chestnut aureola.

6° In this class, the chestnut his no longer clustered in an aureola round the pupil, but spread on the whole surface of the iris and only shows some greenish yellow irisations.

7° Eye entirely chestnut.

This grouping enables us to pass by almost imperceptible transitions from the light blue eye to the pure chestnut eye. To examine the eyes the operator should place himself in the angle of a window, his back to the light—avoid using the word *grey*. For further details, read the *Revue Scientifique* of 18 July 1885 “*La couleur de l’iris en anthropologie*” by Alphonse Bertillon.

The various differences between one individual and another are so numerous, and as you have seen, the measurements are so accurate that out of 100,000 subjects there are scarcely 10 whose measurements at all approximate.

This system of measurements and the classification which has sprung from it has been practised in Paris for three years, and already more than 30,000 photographs have been classified by its means.

The useful results obtained from the practical working of this system were naturally not numerous until the commencement of the second year of its adoption, that is until sufficient time had elapsed for the collection to accumulate but now the beneficial results are rapidly increasing.

Thus in the first year we were only able to point to the cases of 49 persons measured and recognised by those employed in this office as having come back under a false name.

The numbers rose to 241 in the year 1884 and to 450 for the first ten months of the year 1885. (1)

We must bear in mind that when a criminal gives a false name, he does so because he believes that it will be to his advantage, and that he knows he is wanted for other offences, or thinks that he is, so that the discovery of his identity under these circumstances is equivalent, so far as the general interest is concerned, to his arrest in the open street.

This recognition at the rate of about 1 1/2 criminals per day, by an administrative and methodical process, more than compensates for the salaries of the three persons who are specially employed on this duty.

Let us put on one side the judicial interest involved and consider the subject from a strictly prison point of view. Do not these dissimulations of identity necessarily entail the prolongation of the time before trial. Allowing for an average prolongation of 100 days for each individual detained under a false name we have, at the rate of 500 recognitions per annum (500×100) 50,000 days of detention saved, or about 50,000 francs less expense in the prisons of the department of the Seine alone.

(1) The total number awaiting trial recognised by this process up to the present time, August 1887, has been 1,500.

IV

INSTANCE OF A SEARCH

Every individual arrested who gives a false name is provisionally rephotographed under that name.

The office thus possesses two photographs for each recognition. The original one, which has enabled us to recognise the man, under the real name and the new one taken the very day of the arrest, under the false name.

It is these two proofs that we have here distributed in these boxes to give you in miniature an idea of the classification.

We have thought it best that you should have the actual documents before you.

All these cards have been used for the purposes of identification. They have neither been manufactured nor even copied for the Congress. They are precisely in the same state they were in when they were taken out of the general collection on the very day that the recognitions were effected by their means.

In this box, separated by divisions, we have the ordinary alphabetical classification with which everybody is acquainted. In the other three boxes we have the anthropometrical classification.

When an individual comes to us under his real name it is unnecessary to measure him. A search of a few seconds only in the alphabetical collection will enable us to find his likeness, and to check his account of himself.

If however that search should prove fruitless, that is to say if the name given does not appear in the alphabetical collection, we must proceed with the anthropometrical description, and then search according to the measurements.

We will take for instance as an example the case of a prisoner called Bernard arrested and sent to this office on 13 November 1884. Let us go back to that date.

We will suppose that his name is not in the alphabetical collection, he of course denies energetically that he has ever been previously arrested or measured.

We now proceed to take a description of him and the result is that we find his height to be 1^m 60^c, the length of his head 18^c 7, breadth of his head 16^c 3, the length of his foot 24^c 8, of his middle finger 10^c 4; that the colour of his eyes are chestnut with a greenish yellow periphery.

These particulars once ascertained and recorded, we proceed to the search by measurements.

One word however before commencing the search. We have supposed in the preceding theoretical explanation, that we begin our divisions according to height.

The variations to which the measurements of height are liable are well known to all, and by beginning our demonstration with that measurement, the mind was better prepared for what was to follow. In practise, however, it was not long before we found out the inconveniences attending this order of classification. Subjects came to us much bent and gave thousands of excuses for not holding themselves straight. We were consequently continually hesitating as to which should be our first mark.

On the other hand by commencing our classification with the more reliable measurements, that is those that are the least changeable, such as those of the head, the finger and the foot and by leaving to the last those which had to be used with more caution such as height, length of arms, colour of the eye, we avoided the double search which these measurements often entail.

It is this latter order which has been followed in these boxes and which represents precisely the order used in the collections at Paris, Lyons, Marseille, etc. It is with the length of the head therefore with which we commence.

Now the so called Bernard's head is 18^c 7 long.

In which of these three categories, (small, medium, large) should his photograph be found, if it is to be found in any of them?

Here we have the short lengths, here the medium and here the long lengths, and these are severally designated by the following manner : $\alpha - 18.3$ (that is from the shortest up to 18.3 inclusive); 18.4 — 18.9 for the next or medium length, and 19.0 — ω (that is to say from 19.0 upwards). As you see the figures are consecutive : up to 18.3—from 18.4 to 18.9 from 19.0.—

The figures having shown us that Bernard's head was 18.7 long, we ought to find him in the class of medium lengths. That is amongst those ranging from 18.4 to 18.9. We therefore at once put aside the other two classes, and supposing that they each contain 500 photographs, we have withdrawn 1,000 photographs or two thirds of the total number.

The remaining 500 are themselves subdivided into three classes according to the breadth of the head. That is from α — 15.2 (the narrow) from 15.3 to 15.8 (the medium) and from 15.9 to ω (the broad).

The width of Bernard's head being 16.3, we should find him amongst the broad, i. e. in those ranging from 15.9 to ω and we thus put away two thirds of the present box.

The third of a third remaining is again subdivided (without taking any notice as to slight differences either in the length or breadth of the head) according to the length of the middle finger. We have the long, the medium and the short fingers denoted by the following figures α to 10.9, 11.0 to 11.5, and 11.6 to ω .

Our individual having a middle finger 10.4 long, that it less than 10.9 will have been classed amongst the short fingers (α to 10.9).

From thence we proceed to the length of foot and finally to the height.

Thus by subdivision after subdivision we have arrived at a packet containing but three or four photographs which we can examine in a few seconds and amongst which we find one where the measurements correspond almost to a millimetre with those of the self styled Bernard and with exactly the same features, so much so that we can have no doubt of the identity of the two individuals, but there is this important difference, that the photograph which we have just found and was taken about sixteen months before, 14 November 1884, does not bear the name of Bernard, but that of Jean Leopold, a criminal of the worst type who has been sought for during several months under his name of Leopold.

We have here the photographs of those individuals who were recognised during the last month by precisely the same method as we have described.

They are those of 45 habitual criminals who had been arrested at various times and under different names, but whose latest arrest was made during the last month.

V

MEASUREMENTS AS A BASIS FOR IDENTIFICATION ARE MORE RELIABLE THAN PHOTOGRAPHY

The objection to the extension to the provinces of this method which has given such results in Paris where the photographic service had been already fully organised, was the considerable expense which the organisation of a system of photography in each principal town would have entailed.

We will now point out by what modifications in the details we have been enabled to dispense with this factor which at first sight appeared to be indispensable.

As it must have been seen from the specimens we have showed you, photography itself is but a very slight help. A vast experience in human physionomy is required to recognise in many of these photographs that they are the portrait of the same men taken at different times while they were in custody.

Nevertheless these photographs were all taken in the same studio, by the same photographers, with the same apparatus, with the same light, and as nearly as possible, at the same hour in the morning. (1) How much more marked therefore would the differences be if all those conditions were materially altered.

(1) Each subject is photographed exactly full face and exactly in profile (right side).

The scale of reduction is such that a length of 20 centimetres taken from the face of the subject to be photographed gives on the negative a length of 3 centimetros.—The necessary distance from the apparatus to the chair, for the same as an objective determines the reduction and is so easily obtained by putting a willing subject in the chair, who

Such for instance as the photograph of X... which has sent up to us by the juge d'instruction of a small country town, together with measurements taken by himself, from indications he had seen in a legal paper. The attempt was perfectly successful and enabled us to recognise in X... a criminal wanted in Paris under a different name for other offences.

We may mention here that for this sort of enquiry a photograph taken in profile is far better than one taken full face. The silhouette of the forehead, the nose and above all of the ear gives an unalterable form.

But what about the photograph of G.—P., for instance, where every trace of resemblance has disappeared except the profile of the nose.

Any change in the mode of wearing the hair, beard, etc., complicates the matter amongst adults as will be seen on the photographs of M... and C....

But for this we have a remedy.

As you can see, the difference between each proof is very great. Let us place a paper mark over each so as to cover the hair and beard and we shall at once find that we have identically the same face in both. These slight expedients however but imperfectly correct the insufficiency of photography. The officials employed in the searches, notwithstanding their great dexterity, now make use of the figures alone. They satisfy themselves of the absolute similarity of the anthropometrical descriptions even to a millimetre before they will even look at a photograph, so fearful are they of rejecting the right card through being misled by a deceitful photograph.

Under these circumstances photography is now hardly of any use and is employed only as a means of checking.

should hold perpendicularly on the even part of his face, a wooden ruler on which a band of white paper of 200 millimetres has been pasted. The apparatus is then approached or retired until the 200 millimetres on the ruler are reduced to within 1 millimetre more or less, of 30 millimetres on the impolished glass of the dark chamber.—To avoid trouble at future sittings, it is better once for all to fix two small brackets on the floor of the studio, by which the chair and the apparatus can at once be placed in their relative positions.

The light should be from the left for the full face and for the profile should fall perpendicularly on the face of the subject.

The interest of the profile depending almost entirely on the showing of the inclination of the forehead in connection with the profile of the nose and in the infinite variety in the outlines of the ears, the operator must be careful the hair does not hide these characteristics.

The negatives must never receive the slightest touching up on any pretence whatever.

The two proofs are pasted side by side on the same card 14.5 square, the full face on the right the profile on the left (Fig. 10).

It occurs also sometimes that offenders offer every opposition in their power to being photographed, whereas they willingly allow themselves to be measured.

This refusal does not embarrass us in the least. A card without the photograph is classed in the ordinary way, and when the man is arrested and comes to us under another name, the measurements guide us to his card instead of to his photograph.

We must bear well in mind that it is not a question of *convicting* a man because it happens that the size of his head etc. are the same of those of some other man. We are simply an office for information. We furnish a name, that is to say a thread to the investigation. It is for him, thanks to the previous notes which we enable him to put his hands on, to verify the correctness of it, by obtaining the evidence of the persons who have had previous dealings with the accused : his relations, former landlords, or the former victims of his anterior misdoings, or the warders of prisons who have had him under their charge, etc.

It will be readily admitted however, that if our information, the outcome of anthropometrical work, is confirmed *a posteriori* by such evidence, the result is an absolute certainty for Justice.

For our part, so certain are we of the correctness of our work, that we purposely refrain from communicating to the prisoners that we have discovered their aliases. We have only to listen to what they may choose to say. The search is mostly made when they are not present. The note containing the information that so and so has been previously in custody under such and such a name is sent direct from this office to the *juge d'instruction*, who thus, unknown to the prisoner, finds himself acquainted with the antecedents of the person before him and may allow him to play the farce of talking of his previous honesty so long as he may consider it useful.

Here has not been one single error in the 700 recognitions thus sent up to the present date.

In these researches, made in the absence of the accused, in these notices of recognition, photography, it must be admitted, plays but a very secondary part.

In fact it is on the figures of the measurements aided by the record of particular marks and scars, that the whole mechanism of the search and recognition of the prisoner depends.

VI

THE SUPPRESSION OF PHOTOGRAPHS. — MODIFICATIONS INTRODUCED.

— NEW RESULTS OBTAINED

Mr. Herbette, the Director of prison establishments in France, to whom this method of anthropometrical description owes more than its life, we means by that the incessant moral and material assistance which all new schemes require if they are to succeed, had no hesitation about extending to the whole of France, the method tried in Paris, and this without having recourse too to costly an apparatus as photography.

The experiment though recent has been a complete success. It has nevertheless entailed certain additions to the system "certain reinforcement" which should be mentioned.

As we have already shown, we had by means of seven measurements divided a collection of 60.000 photographs into final series containing less than 10 each.

But why instead of taking seven measurements should we not take twelve? We have an almost inexhaustable choice. The number of parts of the human frame, the measurements of which would vary in different men are innumerable, such for instance as the forearm, the length and width of the ear, the height of the bust, the length of the little finger of the left hand, and, if necessary, all the other fingers of that hand.

The time occupied in taking the description would be but very slightly encreased. For what takes time in operations of this class is not the actual measurement, but fetching the subject, taking the particulars of his "Etat Civil", making him bare his feet, etc. and what costs money are the instruments, the boxes, the cards, etc.

Let us examine what results our new measurements would give us by way of classification.

The first will divide the final packet into three series (small, medium, large). Each of which will again be divided by three by the second additional measurement (result : 9 divisions). This figure will in its turn be multiplied by three for third, fourth and fifth measurements, that is $9 \times 3 \times 3 \times 3 = 243$.

So that by means of these five additional measurements our final packet of 10 will be subdivided again into 243 classes.

That is to say the cards will be so well divided that we should on an average find only one in each 24 pigeonholes. Consequently when in making a search according to measurements we find each a card we may be quite sure that it is the one we are in search of.

Because the descriptions of two individuals have been classed in the same final series, it must not be concluded that they are necessarily equivalent. There are many kinds of short people, from the very short man to the short but almost medium height. The medium sized man may either nearly touch on the short, be really of medium height, or even border on the tall class.

In our class of medium length of head, for instance, which ranges from 18.4 to 18.9, it is self evident that there can be no confusion between the length 18.4 or 18.9, since we measure to a millimetre.

Supposing therefore that several cards should be found classed in the same final division, a more minute comparison of the figures would always be able to distinguish between them.

Finally we have as a last check the record of particular marks and signs.

Every body has some particular marks, such as moles, scars from cuts on the fingers, scars from boils, etc. Three or four of these would be quite enough to enable a man to be identified out of a million provided always that the nature etc. of the marks had been most accurately recorded.

It is very seldom that one finds on an individual identically the same mark that one has already previously noticed on another, but that two persons should be found bearing three or four scars precisely similar would be a coincidence which appears almost impossible and we have certainly never met with such a case.

Who is there that has not got one or more scars from cuts on his fingers? The subject before us certainly has.

Here is one—*Oblique outward scar between 2nd and 3rd joint middle of first finger left hand.*

Here is another—*Scar oblique inward of 5 centimetres, left palm, 3 centimetres above 3rd finger.*

Moles etc. can equally be described with the greatest facility. Thus—

Mole 8 centimetres below left nipple and at 10 centimetres from centre of body.

Mole 4 centimetres left of spinal column and 20 below prominent vertebra of neck.

These two marks to which our subject had certainly never attached the least importance would enable us to recognise him ten years hence. There is certainly nobody else in this town having exactly in the same position the marks we have described. These special marks can be understood by all the world and are much less deceptive and less costly than photographs. We will even go so far as to assert that they are a better guarantee for identification than even measurements and that they would entirely replace them if it were possible to make use of them as a basis for classification.

Those employed in the management of prisons who are neither doctors nor even students in medicine have familiarised themselves entirely with them.

Descriptions are sent up from the country to Paris from which we are enabled, after a search in the general collection, to correct many a man's statement as to his identity. (1)

In urgent cases the telegraph can be used as a means of communication.

(1) It must be added nevertheless that it is absolutely necessary, when it is a question of taking descriptions exclusively anthropometrical, that the indications should be taken with the special instruments with which each prison in France is provided and that the instructions circulated by the Director of Prisons to his officers, should be most strictly complied with.

The addition of photographs, full face and profile on the contrary (see the note on page 14) enables us to reduce the number of anthropometrical indications to the five principal ones, that is length and breath of head, length of foot, of middle and little finger of left hand—the same that have been lately added to the descriptions in all gaol registers. The accuracy of each measurement is even not so indispensable, no matter what compass may be used, provided the operator adheres as exactly as possible to the manual operations we have described above (pages 7 to 10).

VII

INFINITE EXTENSION OF THE CLASSIFICATION

It has been urged that although such good results may be obtained with a collection of 30,000 it would not longer be possible when the collection amounted to 300,000 or 1,000,000—for we must be prepared for everything.

The persons who thus criticise have certainly never dreamed of the formidable-number of divisions all equally probable which are furnished by our twelve indications combined and divided by the three categories (small, medium, large). It exceeds *one million*. The calculation is easily verified: it is only necessary to multiply 3 by 3 eleven times and the last time by 7 which corresponds with our seven classes of eyes.

Our power however of classing does not stop here. Instead of commencing our classification by the stature or by the length of the head, nothing would be more simple than to begin from the date of birth to about ten years without varying the plan in any other way. In this box we would place the people born from the beginning of the century to 1829—then 1830 to 1839, 1840 to 1849, 1850 to 1859, 1860 to 1869, etc.

This arrangement would give us an endless classification. For instance thirty years hence—three new generations of ten years each would have succeeded the categorie of 1860–1869 and the earliest (1820–1830) would have been put away amongst the archives.

The only inconvenience that would arise from this plan would be the necessity for a double search when there was reason to suspect that there was cheating in the age stated; this inconvenience however is far from overbalancing the other advantages of the plan.

The above mode of classification, beginning with the date of birth, in periods of ten years, would be applicable to all alphabetical classifications in use for Judicial Records, and in all cases in fact where large classification by name have to be made.

We have seen in Paris amongst the Judicial Records for the whole of France heaps always increasing of Martin, Dubois, Durand. Search amongst them is already almost impossible. There are some clerks who have become almost specialist in Durand, Dubois, etc. Another is devoted solely to the classification and searches of the Martin's.

One may declare positively that notwithstanding a wonderful manual dexterity, ten or twenty years hence at the furthest searches among these records will have become entirely impossible. But, instead of starting with the first letter of the name, D for Durand, M for Martin, why not begin by classing the names according to the decennial period of the birth.

These would be no more rehandlings, no more cumbering up for all time, and with the exception of some verifications in the adjoining series, a great relief in the work of searching.

VIII

ANSWER TO CERTAIN OBJECTIONS AS TO ADOPTION OF THE HATTERS CONFORMATEUR, THE CHOICE OF MEASUREMENTS, QUESTIONS OF LEGALITY, ETC.

We will now consider the objections that may be urged against this method.

It may be said that we take too many measurements—"10 or 12 "indications are far too many; 8 or 10 are pretty well; but 12! Besides "your five million divisions will never be required in France, nor even "in the largest country in the world; let us hope so at least especially "if you adopt the decennial classification you speak of."

We ourselves are almost of that opinion; we have an excess of classifying power, but we think it better to leave it to time to show what indications may be safely omitted as having proved defective or unnecessary. It is easy enough in a classification of this sort, to suppress, to strike out of the forms in the collection any particulars found superfluous, whilst on the other hand it is manifestly impossible to add *a posteriori* five or ten years afterwards additional particulars, when the subjects examined are far away.

We have often been advised to make use of the hatters conformateur a large and expensive instrument which is supposed to give the conformation of the head on a reduced scale. But as you are aware, it is numbers, accurate figures which we require for our classification into *small, medium, large*. Is it not therefore infinitely preferable that these figures of the length and width of the head for instance, should be taken

directly from the head itself of the subject than from a plan on a greatly reduced scale, where the slightest error would be multiplied in the same ratio as the reduction.

We do not believe that there is anything to be gained by increasing the number of measurements or of substituting fresh ones in the place of some of those now in use. The other measurements which naturally occur to the mind have all some prohibitory inconvenience attending them. The breadth of the shoulders can be influenced by the will, and varies too much according to corpulency. It is the same with the stretching out of the hips which formerly we were much in favor of.

The measuring of the height to the fork of the legs is a measurement equally disagreeable to the person taking the measurement and to the person measured. The measurement of the nose is repugnant to the subject and might lead to contagion.

Other well intentioned persons have recommended that the prisoners should be tattooed with numbers, instead of being measured, that would simply be a disguised reestablishment of the mark which we most energetically repudiate and which moreover would require a special legislative enactment; we are sure our country would never have taken the initiative in such a system as that.

It now remains for us to consider the anthropometrical system in a legal point of view. Can it be made compulsory, and if so by what means?

In France these descriptions have been simply assimilated to the old ones as regard prison regulations and it is under this authority that the principal measurements appear on the gaol registers following the "Etat Civil."

The description in whatever way it may be taken is the description of a certain individual. There is no reason therefore why it should not include the length of the bust as well as the man's height. Does not the indication—"face round, mouth large or small" exactly mean the same thing as—"face or mouth of so many centimetres"; they are simply measurements without instruments.

We may add that since the anthropometrical descriptions have been made compulsory criminals submit themselves willingly to them and not one has as yet persisted in a refusal to allow himself to be measured, after a few hours reflection.

The most dangerous criminals as well as the quiet habitual criminals

are always convinced that it is the last time that they will be caught, and they therefore are full of contempt for the system.

When therefore they are again arrested after an interval short or long as the case may be and then give a false name, their only anxiety is to call as little attention to themselves as possible, and above all as to their identity.

The future will show whether the experience gained at their expense will make them more surly.

Other solutions may be adopted in countries where reigns the non-interpretation of laws and rules.

1° Prolong with the consent of Justice the time of detention before trial until the criminal either gives indisputable proofs of his identity, or consents to allow himself to be measured.

2° Proceed with the consent of Justice to the immediate trial of the refractory one.

In the case of acquittal, the knowledge of the description loses a great part of its interest.

In the more probable event of a conviction, proceed at once to take the anthropometrical description, the fact of the refractory one being legally convicted obliges him to submit absolutely to all prison regulations, and if the search after conviction, leads to any discovery, at once inform the Bench who would call *a minima* and recommence the enquiry.

The proceeding in each country in such a case must of course be governed by its own laws.

It should be noticed that in classification with photographs, one may be satisfied with measuring hats, gloves and shoes as guides in the search. It was thus that we had to deal lately with a pick-pocket who declined to be measured. The search occupied a little more time than usual, but it resulted nevertheless in our finding in less than ten minutes the photograph of our man, classed two years before under another name. We may add that once identified our friend made no further demur about being measured.

In a collection however without photographs based on the figures only it is absolutely indispensable that the numerical indications should be taken from the subject himself with the special instruments, and not with the eye, *de visu*.

IX

PRISON AND INTERNATIONAL QUESTIONS. — CONCLUSION

It has also been stated that this process was a question for the Police and Justice, but that it was of no interest to Reformatory science.

The organizers of the Prison Congress at Rome clearly were not of that opinion when they invited me to attend the Congress. It is manifest also that preceding Prison Congress agreed with them or they would not have inscribed on their agenda papers the analogous question of the International Exchange Judicial Records.

It was also been said : "What difference can it make to the governor of a prison whether such and such cell is occupied by a dissembling habitual criminal or by a man who has committed his first offence ?

Are those old theories still extant where the officials of prisons where looked upon as superintendency turnkeys—"Six months emprisonment, one year", and nothing more.

Does not the first step towards reforming a prisoner rest on a knowledge of his antecedents ? In prison as before Justice are we to treat the habitual criminal and the man who has fallen for the first time in the same manner.

In the associated prisons, which many towns have not yet got rid of should these two be placed together in the same court ?

The dissimulation of a man's identity as we have already pointed out entails a considerable prolongation of his detention before trial. Does not anything which tends to shorten what has been called the torture of modern times, interest prison science ?

Does not the pecuniary benefit which results from its action affect the ressources of the Management ?

But let us look at it from a more elevated point of view. Neither the clerks of the Courts, nor the Justices of the Peace (we refer only to France) are able, on account of their daily duties, to superintend the taking each day of these anthropometrical descriptions. In all times Justice has applied to the Prisons to obtain information in questions of doubtful identity. Because Justice receives the more immediat benefit from the spread of this method is that a reason why Prison Management should systematically refuse its assistance?

In our opinion, administrators who like Messrs. Herbette, Camescasse, Vel Durand, Gragnon, Naudin, as regard France, who have presided over the organisation of the system of anthropometrical descriptions havé rendered good service to the Reformatory Work.

We have indicated the motives which guided us in our mode of action.

Our dearest wish is to see the system of anthropometrical descriptions adopted by other countries.

The "Instructions Signalétiques" which has been specially prepared for the use of heads of prisons in France, gives the fullest details on all practical points connected with the system.

It shows in the most precise manner the mode of measuring etc. which we have been led to adopt after five years of laborious and expensive experience.

We have resolved whatever effect it may have on our old collection not to decline any modification which offer any advantage. But we beg Executives in other countries who may be inclined to adopt the system not each separately to introduce isolated modifications which would destroy the uniformity of the system, when it is so easy to come to a general agreement on the choice of measurements, of instruments and as to the *modus operandi*. It is when the question first arises that the foundations of an international future must be laid without waiting till the routine on one hand and the annual accumulation of dissimilar information on the other, raise up an insuperable obstacle. (1)

(1) The non universal use of the metrical system is no obstacle to internationalism. It is quite sufficient in countries where the metre system is not use that the figures of our instruments should be regarded not as measurements of length, but as figure signs, indices of a particular sort. It is not the length in any fixed measure that we require, but the length; it is a figure of so much, figures that shall always represent the same quantity.

The important point is that the exchange can be made rapidly and without complications.

ADDRESS OF M. L. HERBETTE

After this conference, Mr. Herbette, Director of the Penitentiary Department of the Ministère de l'Intérieur in France adressed the meeting. He recalled the services already rendered by the anthropometrical system, and those it is called upon to render. He mentioned in particular the recent case of an offender arrested at Lyons under the name of Buisson who thanks to this description sent to Paris by telegram, was discovered to be a man called Bosconi, a fugitive cashier condemned per contumacium. He spoke strongly as to the assistance that this method would render towards the recognition of international criminals who so freely change their name and their country.

Crime becoming in a certain way professional in the hands of certain individuals who know how to take advantage of the progress of our civilization to escape being repressed, it is natural that Society should use all the discoveries of science to thwart their devices. The practical application of Mr. Bertillon's method has fully fulfilled the hopes that the theory had inspired. In Paris, Versailles, Melun, Poissy, Lyons, etc. the process was at work in its integrity. A few days had sufficed to teach the warders. In the less important prisons, it is considered sufficient to note on the gaoler's register the cephalic diameters, the length of middle and third fingers of left hand and left foot. These indications are quite sufficient to baffle all attempts at falsification of identity. The Executives of foreign countries would at their request be furnished with all information and documents which could assist them in adopting this new method.

Proceeding to a more extented view of the subject and praising the successful efforts of Mr. Bertillon, Mr. Herbette pointed out how this verifying of the physical personality, and the indisputable identity of people of adult age should in modern society fulfil real requirements and under the most varied services.

If it were a question for instance of giving to the inhabitants of a country, the soldiers of an Army, or travellers going the most distant lands, notices or personal cards, recognisable signs enabling them always to prove who they are, if it were a question of completing the records

of the Etat Civil by sure indications, to present any error, or any substitution of persons; if it were a question of recording the distinctive marks of an individual in documents, tittles, contracts where his identity should be established for his own interest, for the interest of third parties or for that of the State, there the full benefit of the anthropometrical system would be realized.

Should it be a question of a life certificate, life assurance contract or proof of death, to certify to the identity of a mad person, or one badly wounded or disfigured, the body having been partly destroyed, or had become difficult to recognise, in case of sudden or violent death, the result of a crime, an accident, a shipwreck, a battle—how great would be the advantage of being able to trace these characters unchangeable in each individual, infinitely variable as between one individual and another, indelebile at least in part even in death.

There is still more cause to occupy oneself with it if it is a question of identifying persons a long way off, after the lapse of a considerable time when the general appearance, the look, the features, and the physical habits have changed naturally or artificially, and that without moving or expense, by the simple exchange of a few notes or figures sent from one country to another, from one continent to another, so know in America what sort of a man it is who has just arrived from France and to show clearly whether a certain traveller one finds in Rome is the same person that one measured in Stockholm ten years before.

In one word to fix the human personality, give to each human being an identity, a certain individuality lasting, unchangeable, always recognisable, easily proved this appears to be the extented aim of the new method.

It may consequently be said that the extent of the problem as well as the importance of its solution far exceeds the limits of penitentiary work and the interest, not inconsiderable which final action has exercised amongst various nations. These are the motives for giving to the labours of Mr. Bertillon and to their practical utilization the publicity they merit.

It remains only to thank the members of the International Congress for the approbation and valuable encouragement they have been good enough to give to an enterprise of this sort. (Loud applause.)

APPENDING TO THE NEW MODE
OF DETERMINING IDENTITY

MELUN. — ADMINISTRATIVE PRINTING
